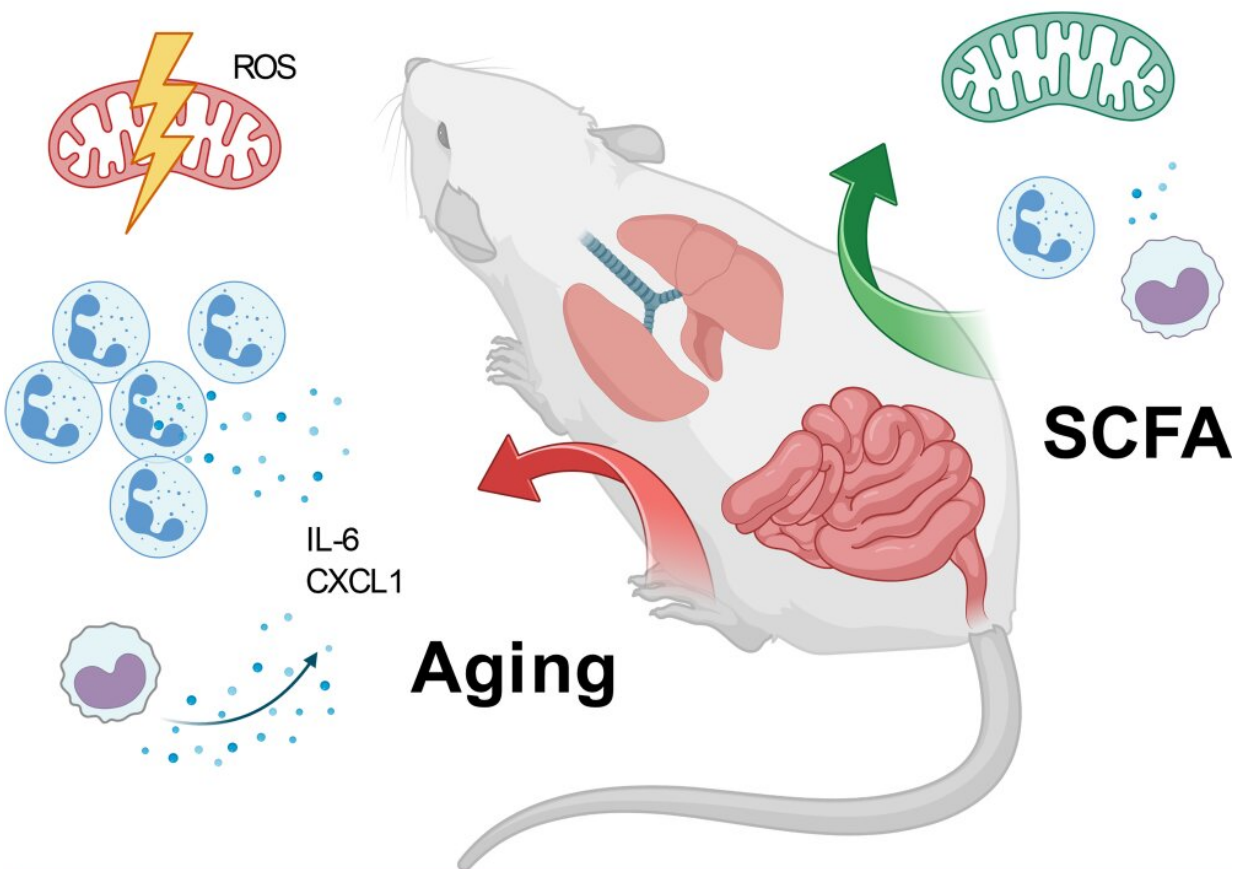


# Short-chain fatty acids reduce inflammation in the lungs of older mice

May 17 2023

## SCFAs Improve Inflamm-aging in Gut-Lung-Axis



AMERICAN JOURNAL OF PHYSIOLOGY

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The gut microbial community structure—communities of bacteria, viruses and fungi that live in the intestines—influences the inflammatory response in the lungs of aging mice, according to researchers from the Institute of Functional Anatomy at Charité, the Medical University of Berlin in Germany. The study is published in the *American Journal of Physiology-Lung Cellular and Molecular Physiology* and has been chosen as an APSselect article for May.

Inflammation leads to reduced lung function and disease in [older adults](#). It also worsens their prognosis in cases of pneumonia and acute lung injury. However, the source of the inflammation and potential treatments are not fully understood.

In this study, researchers analyzed the [gut microbiome](#) and its impact on inflammatory signaling in aging lungs. Then, scientists tested the effects of short-chain fatty acids (SCFAs)—beneficial metabolites of the gut microbiome—in mice ages 3 to 18 months. The animals drank either water mixed with SCFAs or water only. The researchers discovered that inflamm-aging (chronic, low-grade inflammation that develops during aging) in the lungs of healthy, old mice was reduced when they were supplemented with SCFAs. The research team also found an improvement in pulmonary inflammation severity in older mice with acute lung injury.

"This study provides new evidence that SCFAs play a beneficial role in the gut-lung axis of the aging organism by reducing pulmonary inflamm-aging and ameliorating enhanced severity of [acute lung injury](#) in older mice," this study's authors wrote. The researchers said these findings

could help improve human health as it relates to pulmonary aging by focusing on gut bacteria.

**More information:** Christina B. Hildebrand et al, Short-chain fatty acids improve inflamm-aging and acute lung injury in old mice, *American Journal of Physiology-Lung Cellular and Molecular Physiology* (2023). DOI: [10.1152/ajplung.00296.2022](https://doi.org/10.1152/ajplung.00296.2022)

Provided by American Physiological Society

Citation: Short-chain fatty acids reduce inflammation in the lungs of older mice (2023, May 17) retrieved 26 June 2024 from <https://medicalxpress.com/news/2023-05-short-chain-fatty-acids-inflammation-lungs.html>

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